

REMARKS

In a previous response, Applicants elected claims 1-30, 33-37, and 39-41 without traverse and canceled claims 31, 32, and 38. Applicants also previously added claims 42-45. In the present response, Applicants cancel claims 4, 6, 19, 21, and 36 and add claims 46-55. The new claims are supported by the originally filed claims. Consequently, claims 1-3, 5, 7-18, 20, 22-30, 33-35, 37, and 39-55 are pending.

In the outstanding Office Action, the Examiner rejected claims 1-3, 5-10, 15-18, 20-25, 30, 33-35, 37, and 39-45 under 35 U.S.C. §102(e) as being anticipated by Kivekas et al., U.S. Patent Application No. 2004/0137870; the Examiner also rejected claims 11-14 and 26-29 under 35 U.S.C. §103(a) as being obvious over Kivekas; the Examiner also indicated that claims 4, 19, and 36 were allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 4, 19, and 36

The Examiner indicated that claims 4, 19, and 36 were allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 4 originally depended from claim 1. Applicants have created a new claim 51 containing the subject matter from claims 1 (prior to being amended herein) and 4, and Applicants have canceled claim 4. New claim 52 contains the subject matter of now-canceled claim 6. As for claim 19, this claim originally depended from independent claim 16. New claim 53 contains the subject matter from claims 16 (prior to being amended herein) and 19. Applicants have canceled claim 19. New claim 54 contains the subject matter from now-canceled claim 54. As for claim 36, this claim originally depended from independent claim 33. New claim 55 contains the subject matter from claims 33 (prior to being amended herein) and 36. Applicants have canceled claim 36.

New independent claims 51, 53, and 55 therefore should be allowable, as should dependent claims 52 and 54, which depend from claims 51 and 53, respectively.

Rejection of Claims under 35 U.S.C. §102(e)

The Examiner rejected claims 1-3, 5-10, 15-18, 20-25, 30, 33-35, 37, and 39-45 under 35 U.S.C. §102(e) as being anticipated by Kivekas. Applicants respectfully submit the amended independent claims are patentable over Kivekas.

Independent claim 1 is representative and recites the subject matter of “tuning a resonance frequency of at least one resonator based on the measured downconverted response so as to compensate at least for variations in component values that comprise the at least one resonator”. Instead, what Kivekas states is the following:

Thereby, the *balanced circuit arrangement* can be linearized in terms of even-order non-linearity by introducing *a controlled imbalance* in the load of the balanced circuit arrangement.

Paragraph 0024 of Kivekas.

Thus, the second-order input intercept point (IIP2) can be maximized by adjusting the loads of *balanced circuit arrangement* into a slight *imbalance*. This can be achieved by creating a controllable extraneous imbalance between the output loads of the balanced circuit arrangement.

Paragraph 0025 of Kivekas.

According to the present invention, the load values of the *load impedances* Z_{La} and/or Z_{Lb} [of a *balanced circuit arrangement* shown in FIG. 2 of Kivekas] are controlled by the controller 4 so as to introduced [sic] *a load imbalance* required to maximize the IIP2 performance of the multiplier or mixer circuit.

Paragraph 0043 of Kivekas.

In general, any transceiver, receiver or transmitter circuit can be calibrated by properly adjusting the *load imbalance of an* included *balanced circuit arrangement*.

Paragraph 0044 of Kivekas.

Based on the measured DC outputs, the DSP 8 provides a control to the controller 4 so as to *adjust* the *load imbalance* and thereby minimize the increment or increase in the DC voltage or in the lowpass filtered output signal *at the output of the mixer 6* due to the DC error.

Paragraph 0049 of Kivekas. It appears that Kivekas discloses adjusting a load imbalance of load impedances in a balanced circuit arrangement. There is no teaching in Kivekas of “tuning a resonance frequency of at least one resonator based on the measured downconverted response so as to compensate at least for variations in component values that comprise the at least one resonator” as recited in claim 1.

It is noted that Kivekas references a “local oscillator”. See for instance the following:

As can be gathered from FIG. 6, a local oscillator voltage $V_{\text{sub.LO}}$ generated by the receiving *local oscillator* 5 is applied between the base terminals of the transistors Q1 and Q2 and between the base terminals of transistors Q3 and Q4, while a radio reception frequency voltage V_{RF} obtained from the LNA 10 is supplied between the base terminals of the transistors Q5 and Q6. Thereby, the output voltage V_{OUT} between the collector terminals of the transistors Q1 and Q3 and the transistors Q2 and Q4 corresponds to a multiplication of the *local oscillator* voltage V_{LO} and the radio reception frequency voltage V_{RF} . The load value can be trimmed in both output branches to obtain a desired load imbalance.

Paragraph 0057 of Kivekas. There is, however, no teaching in Kivekas that a resonance frequency of the local oscillator is modified based on measured downconverted response.

For at least these reasons, independent claim 1 is patentable over Kivekas. Amended independent claims 16, 33, 42, and 44 each recites similar subject matter. For example, claim 16 recites “circuitry ... for performing tuning a resonance frequency of at least one resonator based on the measured downconverted response so as to compensate at least for variations in component values that comprise said at least one resonator”; claim 33 recites “tuning a resonance frequency of at least one resonator based on the measured downconverted response so as to compensate at least for variations in component values that comprise the at least one resonator”; claim 42 recites “means for tuning a resonance

frequency of at least one resonator based on the measured downconverted response so as to compensate at least for variations in component values that comprise said at least one resonator”; and claim 44 recites “tuning a resonance frequency of at least one resonator based on the measured downconverted response so as to compensate at least for variations in component values that comprise the at least one resonator”. The argument given above with respect to claim 1 is equally valid with respect to claims 16, 33, 42, and 44. Consequently, each of claims 1, 16, 33, 42, and 44 is patentable over Kivekas.

Dependent claims 1-3, 5, 7-18, 20, 22-30, 33-35, 37, and 39-50 are therefore patentable over Kivekas for the reasons given above with respect to claim 1.

Rejection of Claims under 35 U.S.C. §103(a) and Disqualification of the Kivekas Reference


The Examiner also rejected claims 11-14 and 26-29 under 35 U.S.C. §103(a) as being obvious over Kivekas.

The instant application and the Kivekas reference were, at the time the present invention was made, owned by or subject to an obligation of assignment to the same entity, Nokia Corporation. The Kivekas reference is consequently disqualified under 35 U.S.C. §103 (c) as a reference against the instant application.

Based on the foregoing arguments, it should be apparent that claims 1-3, 5, 7-18, 20, 22-30, 33-35, 37, and 39-55 are thus allowable over the reference(s) cited by the Examiner, and the Examiner is respectfully requested to reconsider and remove the rejections. The Examiner is invited to call the undersigned attorney for any issues.

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